



# CTC

## CHARLES TAYLOR CONSULTING

### *Claims by Engineers*

*Problems that engineers encounter when  
claiming.....and the trouble these cause to insurers*

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# On and off the rails - 1

- *Engineers' everyday work:*
  - *Designing*
  - *Supervising*
  - *Specifying*
  - *Maintaining*
  - *Operating*
- *Applying knowledge to obtain cost effectiveness*
- *Little experience of failures*
- *Only passing interest in contracts/policies*

# Case History - 1

A reservoir barrage was being built in a developing country across a river. A local civil works contractor constructed a bridge for earthmoving plant out of whole felled trees lashed together with rope.

The barrage consultant's senior engineer on site had initially objected to the contractor's temporary bridge on the basis that it was not designed in accordance with conventional engineering principles.

One night the barrage suffered a catastrophic piping failure in the soil beneath the concrete side walls. After its destruction, the contractor quietly pointed out that the unconventionally designed bridge (on which both contractor and consultant were standing surveying the scene of devastation) had lasted longer than the engineer's barrage.

What the foreign engineer had not done was to pay attention to the assumptions about soil conditions incorporated into the barrage design based on poor site investigation information. Had soil properties been checked on site during construction and compared to the assumptions in the design the loss could have been avoided.

# On and off the rails - 2

- *Projects expected to run smoothly*
- *Uncertainties focussed on:*
  - *cost and programming overruns*
  - *commissioning hiccups*
  - *breakdowns*
- *Reaction to being pushed seriously off course - Measured consideration?*
- *Mostly no experience of sizeable claim (or similar type of claim)*
- *No differentiation between insurance and contractual claims?*



# Case History - 2

During the construction of a hydro-electric project a failure occurred in the lining of a high pressure inclined shaft feeding water into a turbine hall. The shaft had been bored through rock and the lower section was lined with steel. The upper section, however, was lined only with sprayed concrete because the designers had assumed that there would be adequate stress in the rock to resist the pressure of the water in the shaft. The failure of the sprayed concrete lining took the form of a longitudinal split, which allowed water to percolate down through the rock and enter the turbine hall under pressure through its walls.

When faced with this problem a senior partner from the design firm initially instructed the contractor to fill the split in the sprayed concrete with flexible polysulphide (bath sealant). When this did not work he instructed them to bolt a rubber strip across the split on the inside presumably believing that the water pressure in the shaft would push the rubber so tightly onto the concrete that a seal would be formed. Not surprisingly this also failed at which point the firm reverted to engineering. A steel lining was eventually extended along the full length of the shaft.



# On and off the rails - 3

- *Having lost control – objective is to regain it technically and economically*
- *Problematic – no defined recovery procedure*
- *Accusations of incompetence?*
- *Criminal prosecution?*
- *Pressure to re-start or catch up*



# Case History - 3

During the *pre-commissioning tests* for a hydrocarbon processing plant a *hole* was discovered in the wall of a stainless steel pipe intended to carry *highly flammable process feedstock under pressure*. The presence of the hole *undermined confidence in several kilometres of similar pipework*. Examination and measurement of a number of pieces of similar pipe suggested *a manufacturing defect owing to below specification wall thickness and weight*. The *ensuing crisis threatened commercial relationships* between pipe manufacturer, supplier, contractor and client.

A *more rigorous examination* of the suspect pipe specimens *cast doubt* on the accuracy of the method used to check the specification compliance of the pipes leaving only the holed pipe with an unquestionable defect. *Closer examination* of the metallurgy of this pipe section suggested that it was *not part of the same manufacture as the remainder of the pipe* and appeared to have been *mixed in with project pipework by accident* in a fabrication yard between the pipe supplier and the project site. *Replacing one bend rather than several kilometres of pipework* built into a completed process plant therefore solved the problem.

# On and off the rails - 4

- *Insurers want:*
  - *Evidence of cause preserved*
  - *To understand what happened*
  - *To keep alive recovery prospects*
- *Engineer may have to show to senior managers*
  - *Cause is understood*
  - *Loss will not be repeated*
  - *Risk improvements implemented*



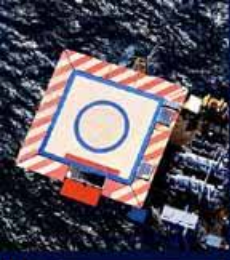


# On and off the rails - 4

- *Front line engineer may not be a designer but be faced with re-design job.*
- *Change needed to 'investigative' and 'remedying' mode*
- *Engineer involved may find this difficult*

# Friend or Foe?

- *Engineers faced, post-loss, with professional interferers*
  - *Senior managers*
  - *Owners*
  - *Insurance brokers*
  - *Loss adjusters – several types*
  - *Health and Safety Inspectors*
  - *Regulators*
  - *Risk Surveyors*
  - *Accountants*
  - *Lawyers*
  - *Bank representatives*
  - *Expert Technical Investigators*



# Friend or Foe?

- *Different information to be disclosed*
- *Guarded statements?*
- *Engineers may feel cause is known but be proved wrong*
- *Insurers seeking the truth*
- *Admitting loss of control or poor judgement requires bravery*

# Denial

- *Accepting project has gone seriously wrong can be hard*
- *Engineers can deny the need to involve others particularly insurers*
- *The result can be late notification or worsening of damage*



# Case History - 4

During commissioning of a gas turbine, faults were found in the control system software resulting in what was thought to be repeated false alarms in the lubrication system failure warning system. These alarms were routinely over-ridden/ignored by operators as there were so many of them. This included over-riding a notification when the lubricating system did fail resulting in the turbine/generator rotor running for several hours without lubrication. Serious damage to journals and bearings resulted in several months of delay and several million dollars of damage whilst the turbine/generator was repaired.



# Lost in translation - 1

- *Engineers talk in jargon*
- *But other professionals do too and engineers can lose the thread*
- *Failure by engineers to understand can*
  - *Cause irrelevant information to be given to insurers*
  - *Delay claims settlements*
  - *Trigger unnecessary actions*

# Lost in translation -2

- *Questioning can be traumatic*
- *Defensive response is natural*
- *Engineers not always good at advising on the hypothetical*
- *May be difficult to switch between the absolute truth and approximations or speculation*



# Moral Judgements - 1

- *Contracts and insurance deliberately adjust the legal framework that would exist without them*
- *They can be difficult to follow ( "small print"-relied on by some with the intent to avoid moral obligations?)*
- *Previously ignored by engineers*





# Moral Judgements -2

- *Contracts intended to minimise disputes*
- *Liabilities and responsibility to obtain insurance transferred between parties*
- *As a result a party who is not at fault may have to bear costs of a loss – Engineers can be faced with outraged third parties if liability is denied because of a contract*



# Case History - 5

A gas turbine suffered failure of its lubrication system shortly after it had been made operationally active but before the originally scheduled operational date. The manufacturers/suppliers were still on site to deal with warranty obligations. Substantial repairs were undertaken by the manufacturer/supplier as they associated the failure so close after acceptance as being their fault. They then attempted to recover the cost from the Erection All Risks insurer. The contract for the supply of the unit however only required the supplier to provide insurance up until acceptance after which it had been anticipated that the client would have operational machinery breakdown insurance. By ignoring the provisions of their contract the engineers working for the manufacturer/supplier had taken upon themselves the cost of remedial works, which should have been paid for by the operational risks insurer.

# Moral Judgements -3

- *Failure to set up correct legal stance can mean*
  - *Insurers have to deal with costs incorrectly accepted – flawed claims*
  - *Insureds have inappropriate expectations*
  - *Unjustified resentment*
  - *Unnecessarily awkward negotiations*



# Case History - 6

An air conditioning system for an electronics warehouse building began to corrode in a very hostile environment even before the building became operational. Without consulting insurers a senior member of the staff of the company responsible for managing the project made a clear statement that the cause of the problem was the work undertaken by his company. This was before a full investigation of the problem had been completed. In fact responsibility for the specification of the corrosion resistance of the air conditioning lay with a combination of sub-consultants and suppliers who had their own insurance. The project management company's insurers would, under normal circumstances, have dealt with the claim and taken subrogated rights against the sub-consultants and suppliers. The project management company's claim was however repudiated because of the admission of liability leaving the project managers to sort out the mess themselves.

# Picking up the pieces -1

- *Engineer likely to be central to repairs*
- *Costs need correct allocation*
- *Losses create opportunities for modifications*
- *Insurer involvement increases expenditure approval complexity*
- *May be difficult to identify the decision makers – particularly where there is foreign reinsurer involvement*

# Case History - 7

Following a major power station fire and subsequent contamination, the owner/operator decided to use the opportunity and funds resulting from the claim to upgrade the station. A new state-of-the-art control room was added to replace the previous one and the station re-configured so as to allow it to operate as a spinning reserve (which it had not been capable of pre-fire). Whilst costs of work were recorded there was little effort to establish the cost of a straight like-for-like replacement as allowed for within the insurance policy. Engineers involved in the reinstatement work were too busy with the configuration of the new set-up to undertake a division of the costs between like-for-like and betterment and this resulted in a delayed settlement and increased adjusting costs.





# Picking up the pieces -2

*Losses create workloads -*

*Additional burdens of:*

- Investigations*
- Repairs*
- Modifications*
- Finance*

*Badly managed recovery can produce:*

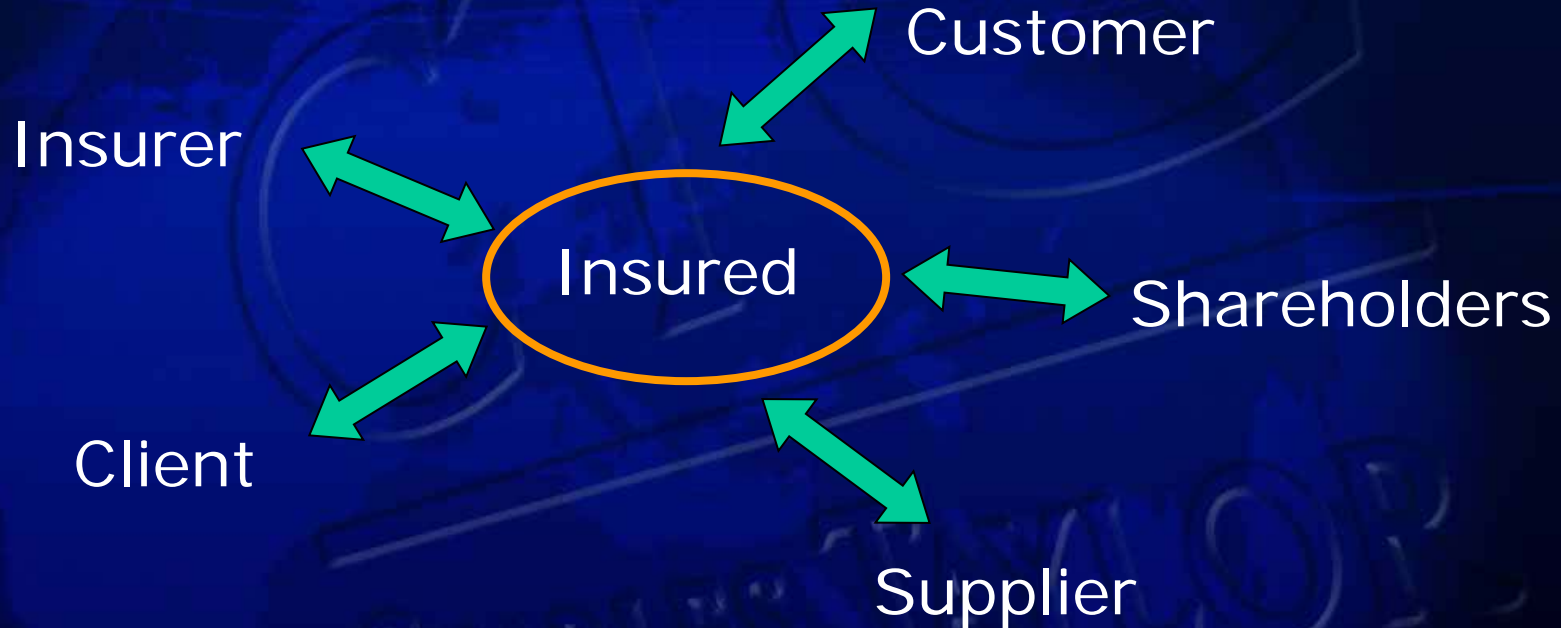
- Delayed settlement*
- Extra assistance costs*

# Picking up the pieces -3

- *Uncertainty over whether insurers will pay*
  - *Prolonged cause investigations or complex liability issues*
  - *Work must go on in the meantime*
  - *Engineers sometimes set up unrealistic expectations in minds of managers*
  - *Recipe for dissatisfaction and difficult negotiations*
  - *Expectations need to be managed early on*



# Relationships 1



- *The response to a loss can be more important than the loss itself*

# Relationships 2

- *Relationships with suppliers or customers may be more important than with insurers*
- *Losses sometimes caused by suppliers (e.g. turbine manufacturers)*
- *Insurers may be looking to make recovery*
- *Insured's engineers may want to protect commercial relationships*
- *Single supplier may have great power (repairs/replacement of equipment)*

# Relationships 3

- *Difficult negotiations*
- *Multiple purchases from one supplier – some paid by insurers some paid by insured*
- *Temptation to load prices*
- *Danger of straining relationship with insurers*
- *Loading may be difficult to detect and costly*

# Impact of bad practices 1

- Increase in size of loss particularly BI associated with delay
- Unnecessary costs e.g. professional fees
- Waste on inappropriate solutions
- Impede or delay uncovering the truth
- Prejudiced recoveries

# Impact of bad practices 2

- Damage to valuable business relationships
- Delay in settling claims
- Waste on unproductive work – false trails
- Triggering of unnecessary further claims
- Production of unjustified criticism

# Is it all the engineers' fault?

- *Insurance contracts are complex and sometimes counter-intuitive*
- *Policies do not come with book of instructions*
- *Coverage may only rarely be called upon*
- *Engineers not normally encouraged to claim but to use insurance where they have to*

# Is it all the engineers' fault?

- *Making insurance more user friendly*
  - *Explain in simple language:*
    1. *The purpose of engineering insurance*
    2. *The logic behind the deliberately distorting effect of insurance policies and contracts on moral obligations and natural justice*

# Making a better job of it - 1

- *Engineers with no insurance experience often find themselves in the middle of a complex claim*
- *Support from trained and experienced colleagues is very valuable*
- *Loss adjusters and lawyers need to see the engineer's point of view and sometimes provide basic explanations*



# Making a better job of it - 2

- *An informed engineer is likely to be more valuable to insurers than one who is in the dark*
- *More trust by engineers in lawyers and insurers who set up policies and contracts would help*
- *Dismissing policies and contracts as “small print” does a dis-service to those who have, for good reasons, spent years refining them*

# Making a better job of it - 3

The easier and clearer the claim process is made for engineers by insurers, adjusters, lawyers and employers the fewer the problems they will face and the better the result is likely to be for insurers

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